

NOTES ON THE LIFE-HISTORY OF *CORETHRA ALBIPES* JOHANNSEN.¹

BY C. H. RICHARDSON, JR.

Early in August 1912, a number of larvæ of *Corethra albipes* Johannsen together with those of *Anopheles punctipennis* Say, *Ochlerotatus sylvestris* Theobald and *Ablabesomyia dyari* Coquillett were collected in a small pool at Forest Hills, Mass. These were kept in the laboratory for more than a month, observations being made upon them from time to time, with a view to rearing the imagoes, the male of which has not hitherto been described, as well as to gather any facts of interest concerning the biology of this species.

Corethra albipes was described by Johannsen² in 1903 from a single female specimen obtained at Ithaca, N. Y., during August 1903. Since that time no additional specimens have been mentioned in literature, and it was therefore with considerable interest that the species was again secured at Forest Hills.

When full grown the larva of this fly is between 9 and 12 mm. in length, colorless, except for the large black eyes, the black posterior eye-spot, the two pairs of silvery air-sacs, covered dorsally with large black spots, and the brown-tipped mandibles. Often, too, the digestive tract is conspicuous as a brownish or greenish tube with several enlargements and constrictions.

In general structure the larva resembles that of *Corethra plumicornis* var. *americana* Johannsen³ from which it differs in a number of details. There are four long bristles of equal length on the distal end of each antenna as described for *americana*, and in addition another short one slightly more than one half as long as the others (see fig. 1). Posteriorly from the antennæ, are the filaments of the third metamere of Meinert, five on either side of the median line; back of these the paired transparent appendages of the third metamere of Meinert with serrated outer margins.

¹ Contributions from the Entomological Laboratory of the Bussey Institution, Harvard University, 63.

² N. Y. State Museum Bull. 68, 1903, p. 39S, pl. 39, fig. 11.

³ *Loc. cit.* pp. 395-397, pl. 39, figs. 1-10.

The labrum is a large papilliform organ with two groups of about twenty stout hairs at the distal end, and a single bristle on either side about one third the length of the labrum above the distal end. Between the labrum and the mandibles and above the latter are the paired fans, each composed of nine long coarse hairs. There

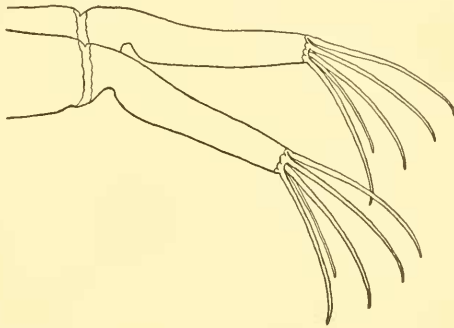


Fig. 1. Antennæ of *Corethra albipes* Johannsen.

are from 18 to 22 such hairs on the fans of *americana* according to Johannsen. The mandibles consist of a group of about four, large, brown chitinized teeth, the last with a serrated posterior margin; above the teeth and on the anterior surface of the mandibles are two spines. The maxillæ are fleshy lobes each with one anterior long jointed appendage, one median short stout spine and a smaller posterior spine. The labium possesses two short spines of equal length.

The two pairs of air sacs are situated in the thorax and in the seventh abdominal segment respectively as in *C. plumicornis* var. *americana* Johannsen. Their dorsal surface is covered by large pigmented cells with large nuclei which appear as hyaline spots in the darker medium.

The caudal appendages are as follows: a ventral comb of twenty long, plumose hairs; Johannsen gives twenty-five such hairs for *americana*; four elongate blood-gills on the apex of the caudal segment; above these four plumose apical hairs, the dorsal pair longer than the ventral; about twelve short, apical hooks situated between the ventral comb and the blood gills, each with

a serrated blade directed posteriorly; below the apical hooks is a pair of large hooks, curved forward.

The food of the larva appears to consist largely of unicellular organisms taken into the mouth without any apparent selection. Microscopic examination of the contents of the alimentary canal showed a quantity of such brown organisms and a smaller number of some sort of an alga. Three Copepods were found in the proventriculus of one specimen.

The pupa does not differ from *americana* except in color, the abdomen being quite colorless while the dorsum of the head and thorax is yellowish brown and the lateral and ventral surfaces dull white.

The transformation from the pupa to the imago took place in the aquarium after approximately sixty hours, the adult issuing through an irregular aperture in the dorsum of the thorax.

The following description of the male is taken from freshly emerged specimens:

Corethra albipes Johannsen. (male)

Basal joint of antennæ pale red, succeeding joints pale yellow with black bases; antennal hairs light yellow, upper surface of proboscis and palpi fuscous; incisures of palpal joints not lighter; cheeks yellowish white; ocellar space brown. Ventral surface of proboscis fuscous. Thorax pale brown dorsally with three reddish brown longitudinal stripes, the median stripe with a piceous median line and piceous lateral borders, the lateral stripes with piceous lateral borders only; the median stripe is produced anteriorly and abbreviated posteriorly, the lateral stripes are abbreviated anteriorly and produced posteriorly; plurae dull white with a pale brown suffusion, spotted with piceous; scutellum pale brown with a black median line and an irregular black spot on each lateral angle; metathorax pale brown, peppered with darker spots. Ventral surface of thorax yellowish white. First and last abdominal segments smallest, others nearly equal; ground color of dorsal surface pale yellow marked with piceous, the markings being heaviest on the anterior part of the segments; sometimes a more or less well-defined anterior median spot and a darker anterior lateral spot on each segment. Hypopygium consisting of two jointed hooks, dark brown in color and about as long as the last abdominal segment. Ventral surface of abdomen with an irregular black spot on either side of the median line. Legs pale yellow, the last three tarsal joints darkened. Wings pale yellow, the veins clothed with long yellow hair; hair is also present on the wing margins, reaching its greatest development on the posterior margin; hair on posterior margin in two rows, one about half the length of the other; longest row composed of very wide hairs (see fig. 2; 1). Halteres white. Length of two specimens 7 mm. and 6.5 mm.

The female is larger, lacks the bands on the antennæ and has *less distinct* markings on the abdomen. (Fig. 2; 2 shows the wing of the female.)

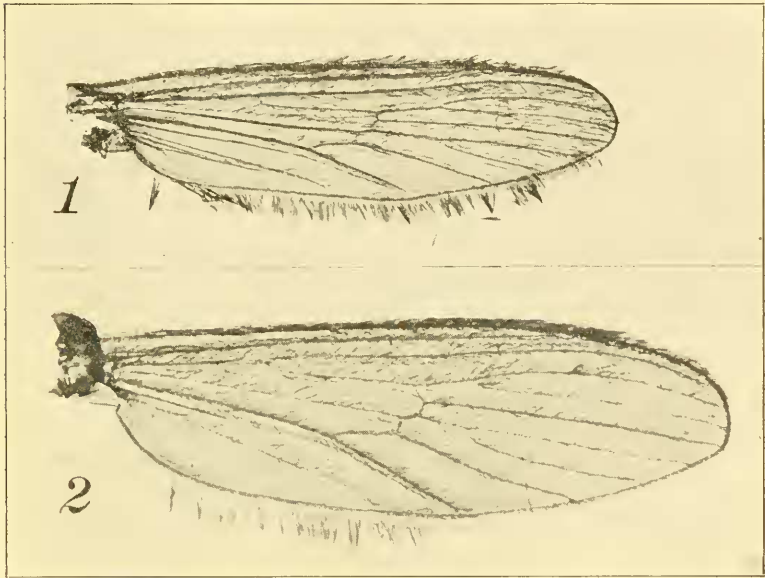


Fig. 2. Wings of *Corethra albipes* Johannsen. 1, Wing of male, enlarged 17 times; 2, Wing of female, enlarged 23 times.

A NEW MELITTOBIA FROM QUEENSLAND, AUSTRALIA.

BY A. A. GIRAULT,
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Melittobia australica, nov.

Normal position.

Female:—Length, 1.1 mm.; usual in size for the genus. General color dark brown-black, including the antennæ; proximal two thirds of abdomen lighter, greyish yellow; legs yellow, the coxæ and femora washed with dilute dusky; venation grayish; fore